# Selected Abstracts from the March Issue of the European Journal of Vascular and Endovascular Surgery

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### Prevalence of Significant Asymptomatic Carotid Artery Disease in Patients with Peripheral Vascular Disease: A Meta-Analysis

Ahmed B., Al-Khaffaf H. Eur J Vasc Endovasc Surg 2009;xx:xx-xx.

**Objectives:** To determine the prevalence of asymptomatic carotid artery stenosis (ACAS) in patients with peripheral vascular disease (PVD).

**Methods:** Literature search was carried out through Pubmed, Medline and Cochrane library. Prospective studies published on prevalence of significant carotid stenosis in patients with PVD and used a duplex scan for screenings were included.

**Results:** Nineteen studies with a total of 4573 patients were included. A prevalence of 28% (fixed effect model) and 25% (random effect model) was seen for >50% stenosis, and 14% (in both fixed and random effect models) for 70% stenosis. Significant statistical heterogeneity existed between studies ($I^2$ = 82.7%, >50% group) ($I^2$ = 77.5%, >70% group). Larger studies revealed a higher prevalence of carotid stenosis.

**Conclusion:** High prevalence of ACAS exists in patients with PVD. A large multi centre prospective study may help to combat heterogeneity and identify subgroups of PVD patients with higher prevalence.

Clinicians who believe in the benefits of carotid endarterectomy for asymptomatic carotid stenosis would gain a greater yield by targeting this group for routine screening rather than a healthy population.

### Prosthetic Carotid Bypass Grafts for Atherosclerotic Lesions: A Prospective Study of 198 Consecutive Cases

Ricco J.B., Marchand C., Neau J.P., Marchand E., Cau J., Fébrer G. Eur J Vasc Endovasc Surg 2009;xx:xx-xx.

**Objectives:** Carotid endarterectomy (CEA) is the standard treatment for atherosclerotic lesions involving the carotid bifurcation. However, CEA can be challenging under some conditions. The goal of this study was to determine the outcome and durability of prosthetic carotid bypass grafting (PCB) with polytetrafluoroethylene (PTFE) grafts as an alternative to CEA.

**Methods:** This is a prospective series of 198 consecutive patients with PCB, representing 12.4% of 1595 patients with a carotid reconstruction procedure performed in our department between September 1986 and December 2006. Qualifying event was stroke in 67 patients (34%) and transient ischaemic attack (TIA) in 45 (23%), and 86 patients (43%) were asymptomatic. Primary indications for PCB were extensive atherosclerotic lesions ($n$ = 71; 36%), carotid stenosis associated with kinking ($n$ = 49; 25%), recurrent stenosis ($n$ = 47; 23%), stenosis after radiation therapy ($n$ = 18; 9%) and technical failure of CEA ($n$ = 13; 7%), with excessive arterial wall thinning and perforation after endarterectomy ($n$ = 10) or intimal flap on completion digital angiography ($n$ = 3).

**Results:** The combined stroke and death rate at 30 days were 0.5% (one stroke). Median follow-up was 9.5 years (interquartile range (IQR): 6.2–18.3 years). At 10 years, primary patency was 97.9 ± 3.4%. Six PCBs (3.0%) became occluded during follow-up; one patient had a restenosis greater than 50% and 18 patients (9.1%) had a restenosis of less than 50%. Five patients had an ipsilateral stroke (one postoperative stroke, one at 103 days with a patent PCB and three related to occlusion of the PCB at 4, 13 and 15 years after the procedure). At 10 years, cumulative stroke-free survival was 98.4 ± 3.2%, and cumulative survival was 78.8 ± 7.0%.

**Conclusions:** PCB is a safe surgical alternative and is durable, with a low incidence of graft restenosis, when CEA seems hazardous.

### Urgent Carotid Surgery in Patients with Crescendo Transient Ischaemic Attacks and Stroke-in-Evolution: A systematic Review

Karkos C.D., Hernandez-Lahoz I., Naylor A.R. Eur J Vasc Endovasc Surg 2009;xx:xx-xx.

**Objective:** To document outcomes after urgent carotid surgery in patients with crescendo transient ischaemic attacks (CTIAs) and stroke-in-evolution (SIE).

**Methods:** A systematic review of the English-language literature using the MEDLINE and EMBASE databases "was undertaken from January 1984 through December 2007". Studies reporting the data after surgery for CTIAs and SIE were identified and stroke, stroke/death and stroke/death/major cardiac event rates calculated. The studies were divided into those reporting on CTIAs (group I) and those reporting on SIE (group II).

**Results:** From the databases, 34 relevant series (915 patients) were retrieved. After excluding those reports on CTIAs, SIE and other 'urgent' indications combined together and from which separate data could not be extracted, a total of 12 series with 176 patients reporting on CTIAs (group I) and 16 series with 114 patients reporting on SIE (group II) met the inclusion criteria. All the identified studies were case series of low methodological quality suffering from selection bias. Peri-operative stroke, stroke/death and stroke/death/major cardiac event rates were 6.5% (95% confidence interval (CI): 3.4–10.4), 9.0% (95% CI: 4.3–15.1) and 10.9% (95% CI: 5.5–17.9), respectively, in group I; and 16.9% (95% CI: 9.2–26.2), 20.0% (95% CI: 12.5–28.6) and 20.8% (95% CI: 13.2–29.6), respectively, in group II.

**Conclusions:** The combined risk of neurological and cardiac complications following urgent carotid surgery for unstable neurological symptoms, such as CTIAs and SIE, is higher than that anticipated after elective surgery for stable symptoms.

### Search for Serum Biomarkers Associated with Abdominal Aortic Aneurysm Growth – A Pilot Study

Vega de Céniga M., Esteban M., Quintana J.M., Barba A., Estallo L., de la Fuente N., Viviens B., Martin-Ventura J.L. Eur J Vasc Endovasc Surg 2009;xx:xx-xx.

**Introduction:** Serological biomarkers could reflect asymptomatic infrarenal aortic aneurysm (AAA) activity and guide patient management.

**Report:** Serum concentrations of C-reactive protein (CRP), alpha 1-antitrypsin and lipoprotein(a) were measured in blood samples from 35 AAA patients and 35 controls and correlated with the aortic diameter and AAA growth in the previous 12 months.

We found a positive correlation between CRP and AAA diameter ($r$ = 0.46; $p$ = 0.007) and alpha 1-antitrypsin and AAA growth ($r$ = 0.55; $p$ = 0.004).

**Conclusions:** Alpha 1-antitrypsin may be a promising biomarker of AAA growth.

### Making the Case for Cardiovascular Screening in Irish Males: Detection of Abdominal Aortic Aneurysms, and Assessment of Cardiovascular Risk Factors

Brosnan M., Collins C.G., Moneley D.S., Kelly C.J., Leahy A.L. Eur J Vasc Endovasc Surg 2009;xx:xx-xx.

**Introduction:** AAA screening programmes have proven to be beneficial and cost effective worldwide for males greater than 65 years of age, with 4.9% males of 65–75 years of age having an un-diagnosed AAA at screening, resulting in a 42% reduction in the risk of rupture in an English population. This study assessed the incidence of AAA and risk factors for atherosclerosis in Irish males of 55–75 years.

**Methods:** From April 2006 to December 2007, males between the ages of 55 and 75 years, living within the catchment area of Blanchardstown Hospital were invited for AAA screening using duplex ultrasound and cardiovascular risk factor screening.

**Results:** 1.9% (17/904) of the study population had previously undiagnosed aneurysms detected, with sizes ranging from 3.0 cm to 5.8 cm (0.6% in 55–65 years old (yo) and 4.2% in 65–75 yo, $p < 0.01$). 33% (302/904) of patients had hyperlipidaemia, while 16% of those with a previous diagnosis of hyperlipidaemia, were inadequately controlled on the test date. 31% of patients had a single elevated blood pressure reading, meriting further investigation for possible hypertension. 3% (28/904) of all patients had a raised glucose levels which had not previously been identified and of those who had a previous history of DM, 46% had abnormal glucose levels. 16% of patients (93/573) were morbidly obese (BMI > 30) and 64% (292/573) were overweight.

**Conclusion:** The incidence of AAAs in 65–75-year-old men is similar to international figures. This study confirms that screening for hyperlipidaemia, hypercholesterolaemia, obesity and hypertension may be worthwhile in all males over 55 years, while AAA screening should be reserved for 65–75-year-old Irish males.